USDA United States Department of Agriculture

NRCS Erosion Prediction Tools

Transitioning from RUSLE2 to WEPP

What is changing?

Iowa NRCS conservation planners will soon switch from RUSLE2 to the Water Erosion Prediction Project process, or WEPP, to estimate erosion caused by water. This model will be included in the NRCS planning interface called the Integrated Erosion Tool (IET). This switch could occur by September 2017

What is WEPP?

WEPP development began in 1985, with some federal agencies using it after its first release in 1995. NRCS has incorporated key RUSLE2 operation database files into a database for WEPP as we prepare the model for adoption by NRCS planners. WEPP will use more recent climate data so estimated erosion rates will more accurately reflect recent climatic conditions.

Both RUSLE2 and WEPP use 30 years of data; however, the WEPP data set will end with 2015 data. RUSLE2's most recent climate information was from 1992. Another key difference is how each tool uses climate data. WEPP is a process based model that will more accurately simulate times of drought and excess rains. RUSLE2 estimated erosion using only average rainfall.

Will estimated erosion rates increase?

Current WEPP testing indicates that the new tool will estimate similar erosion results to RUSLE2, when using the same database. We anticipate estimated erosion rates will change because of the use of more recent climate data. The end result will be better protection of Iowa's soil resources because conservation planning will more accurately reflect the erosion potential caused by the recent change in annual rainfall events.

WEPP will provide more accurate erosion estimates and better predict the amount of sediment delivered to the bottoms of slopes. It is designed to require less database management, making it more friendly for the end user.

How will policies change?

NRCS policies will reflect the use of WEPP technology for water erosion estimation after WEPP is released, including the Iowa

Phosphorus Index for Nutrient Management Plans. Once WEPP is released for NRCS use, state policies, including manure management polices, that refer to NRCS erosion estimation models will need to be updated.

Farmers following a current conservation plan written using RUSLE2 erosion predictions will not be required to make changes due to WEPP erosion rates, unless they are found out of compliance or desire to update their compliance plan.

Will RUSLE2 disappear?

While NRCS staff will no longer use or provide support for RUSLE2, it will still be available for public use as a stand-alone model.

Integrated Erosion Tool

The 2007 NRCS project, "Conservation Assistance Streamlined through Process Re-engineering (CASPeR)," outlined several strategies for streamlining the delivery of conservation assistance through improved tools and information technology.

The Integrated Erosion Tool (IET) was developed as a part of the NRCS goal to deploy information technology that effectively supports and aligns with the delivery of conservation assistance.

The goal of this streamlining Initiative strategy is to provide significant efficiencies for the field. The IET is designed to operate as a feature on the mobile planning tool, aligned with the steps of planning, and fully integrated with common geospatial services.

Iowa

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